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Mineral Industry Surveys

For information, contact:
Peter N. Gabby, Lead Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4957, Fax: (703) 648-7757
E-mail: pgabby@usgs.gov

Smitha Hanumantha (Data)
Telephone: (703) 648-7967
E-mail: shanumantha@usgs.gov
Fax: (703) 648-7975

Internet: http://minerals.usgs.gov/minerals

LEAD IN AUGUST 2004

Domestic mine production, based on the net quantity of lead recovered from concentrate, was 34,800 metric tons (t) in August, according to the U.S. Geological Survey. This was an increase of 3% compared with that of July. Mine production for the first 8 months of 2004 was 272,000 t, down by 10% compared with that of the same period in 2003. Secondary refinery production (96,300 t) decreased by 1% in August, and reported consumption (114,000 t) remained unchanged from that of the previous month. Secondary production for the first 8 months of 2004 was up by 3.5% compared with production in the first 8 months of 2003, and reported consumption rose by about 2% for the same period.

According to the Platts Metals Week published quotations, the average North American producer price increased to 57.30 cents per pound in August, a 6% increase above the July price, and the average London Metal Exchange Ltd. (LME) cash price decreased to $920.77 per metric ton, a 2% decline from the July price. These are significantly higher prices compared with August 2003 averages, up about 31% and 86%, respectively. The LME August prices ranged from a low of $873 per metric ton (August 9) to a high of $980 per metric ton (August 5); in August, the lead prices were below $900 for only 4 trading days. The price increases coincided with a continuing decline in inventories; the LME lead stocks fell by 1,825 t in August and finished the month at 35,625 t.

Extending the pattern that has existed for most of the year in the United States, the supply of lead remained tight in August. On the consumption side, however, there were signs that lead demand may ease up in the near future. Replacement starting-lighting-ignition (SLI) battery production increased in the first half of the year (including July), but summer battery sales were sluggish. Original equipment SLI batteries were also up for the first half of the year (including July), but while new car production/sales were high in July, they were down in August. On the supply side, the mild summer weather lessened the annual surge of scrap battery lead destined for the secondary smelters. The major cause of lead shortages in the regional market however, has been the loss of 120,000 metric tons per year (t/yr) of primary production from the closure of Doe Run Company's Glover Smelter in Missouri in December of 2003. Lead concentrates displaced by this closure are now going to Chinese smelters. The United States shipped 61,000 t of lead concentrates to China in the January to July period. Though they are not exporting lead back to the United States, some is returning in SLI lead-acid batteries—929,664 units for the first half of 2004, up 12% year-on-year (CRU International Ltd., 2004a and Antaike, 2004a). Doe Run Company planned to increase the Herculaneum Smelter's production rate to approximately 160,000 t/yr by the fourth quarter of 2004, dependant upon its ability to comply with air quality standards at the higher levels of production (Ryan's Notes, 2004).

In Europe, lead stocks were low at the end of August—LME stocks were less than 15,000 t, and producer's stocks were under 60,000 t. Stocks of SLI batteries were also thought to be relatively low going into the typically high-demand portion of the year. Limited supply in the European lead market will depend on the rise in SLI battery demand, the quantity of lead metal traders will release, and the availability of lead from America and China (CRU International Ltd., 2004a).

Chinese demand for lead remained robust. Despite high lead prices, most lead-acid battery manufacturers were maintaining normal production levels. July exports of lead-acid batteries were 10.5 million units, and exports from January through July were 67.1 million units. Only 9.67 million of these were SLI batteries. In July, production and sales of automobiles were 364,100 and 346,000 vehicles, down 15.5% and 9%, respectively. This was the fourth consecutive month-to-month decline; production and sales from January though July, however, were 3.11 million (up 23.9%) and 2.9 million (up 20.6%) units, respectively. Freight and transportation problems in and around China seem to be contributing to the higher spot prices. The near-term forecast was for Chinese spot lead prices to fluctuate in a broader range, change more frequently, and more closely track international trends (Antaike, 2004a). The credit squeeze in China started to hit the lead concentrates market. Some shipments of concentrates reportedly were waiting at Chinese ports while purchasers sought letters of credit, and treatment charges moved up to the

$80-$85/t range. Despite this, concentrates imported during the first 7 months of the year totaled 449,000 t, up 56% year-on-year (CRU International Ltd., 2004b).

In India, strong economic performance in recent years and its expanding lead-acid battery industry have led to continued and widening lead metal deficits, from about 50,000 t in 2000 to about 80,000 t in 2003. Hindustan Zinc's Chanderiya smelter expansion, due to be complete by June 2005, was expected to add 50,000 t/yr to India's lead supplies (CRU International Ltd., 2004a).

Japanese zinc smelter Toho Zinc Ltd. and Japanese trading company Yuasa Trading Ltd. have set up a joint venture in Tianjin City, China, to produce recycled lead from used batteries. According to Toho Zinc, the number of vehicles in China totals about 20 million, and production of automobiles in China, which has grown at a rate of about 30% per year since 2001, was expected to surpass total output by Japanese automobile makers in 2010. The joint venture was expected to cost about $2.26 million (Platts Metals Week, 2004). China produces 200,000 t to 300,000 t of secondary lead per year, contributing 20% to 28% to their total lead output, which compares with 60% in western countries (over 80% in the United States). According to Antaike (2004b), China's secondary lead industry has several problems to overcome—low recycling rate, in the range of 80% to 85%, compared with 95% in other countries (97% in the United States); no separation of battery parts is done, and no recycling of alloys—resulting in lower recovery rates; high energy usage, 500 to 600 kg of coal per ton of lead compared with 150 to 200 kg in other countries; and heavy pollution, far exceeding national standards.

The National Defense Stockpile aggregated cash disposal (sale) of lead in August, under the monthly Basic Ordering Agreement DLA-Lead-005, was 3,736 t (4,118 short tons) for an approximate value of $3.7 million. Sales of lead in the first 10 months of fiscal year 2004 (October 1, 2003, through August 31, 2004) totaled 47,749 t (52,633 short tons) (Defense National Stockpile Center, 2004).

Update

The International Lead and Zinc Study Group (2004) held its 49th session in Vienna, Austria, from October 6-8, at which time ILZSG reported its forecasts for lead mine production and total refined metal production and consumption for 2004 and 2005. Global lead mine production was expected to rise by 1.3% in 2004, and an additional 5.7% in 2005. In the first half of 2005, Xstrata Zinc's Black Star operation and Magellan Metal's Magellan Project will add over 100,000 t to Australia's annual lead mine capacity. Ireland and China were also expected to increase lead mine production in 2005. Refined lead metal production increases in China and Kazakhstan were expected to be partially balanced by falls in Australia, the United Kingdom, and the United States, resulting in a 2004 total similar to that of 2003. In 2005, China is expected to increase refined metal output by 6.4% with the help of Xinli Nonferrous' soon-to-be-commissioned 100,000-t/yr secondary plant in Yunan, and Western Mining's 40,000-t/yr primary smelter in Qinghai. Increases in China, together with expected increased refined lead production from Australia, Canada, India, and the United Kingdom, were anticipated to raise world production by 4.1% in 2005. World refined lead consumption was expected to increase by 2.8% in 2004 and a further 2.2% in 2005. As in the past few years, the main driver behind these expected increases will be higher Chinese consumption. Since 2000, Chinese consumption has more than doubled. ILZSG forecast that the Western World lead market will finish the year with a significant metal production deficit of 188,000 t, and forecast an additional 118,000 t deficit for 2005.

At the end of September, LME stocks had increased by 17,450 t to 53,075 t, the first monthly increase of the year. LME lead prices in September ranged from a low on September 2 of $875.00 per metric ton to a high on September 23 of $1,007.00 per metric ton; in September, on 19 out of 22 trading days, the price was above $900.00 per metric ton.

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TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES[1]

(Metric tons, lead content, unless otherwise specified)

	2003		2004		
	Year[p]	January - August	July	August	January - August
Production:					
Mine (recoverable)	449,000	302,000 [r]	33,800	34,800	272,000
Primary refinery	245,000	NA	NA	NA	NA
Secondary refinery:					
Reported by smelters/refineries	1,140,000	715,000 [r]	95,100	94,100	744,000
Estimated	--	7,210 [r]	961	950	7,510
Recovered from copper-base scrap[e]	11,400	10,000	1,250	1,250	10,000
Total secondary	1,150,000	735,000 [r]	97,400	96,300	761,000
Stocks, end of period:					
Primary refineries	NA	NA	NA	NA	NA
Secondary smelters and consumers	107,000	86,300 [r]	67,500 [r]	66,200	66,200
Imports for consumption:					
Ore and concentrate	6	3 [r]	--	NA	1 [2]
Refined metal	175,000	143,000 [r]	17,300	NA	111,000 [2]
Consumption:					
Reported	1,390,000	895,000 [r]	114,000 [r]	114,000	916,000
Undistributed[e]	--	27,700 [r]	3,530 [r]	3,540	28,300
Total	1,390,000	923,000 [r]	118,000 [r]	118,000	945,000
Exports:					
Ore and concentrate	253,000	149,000 [r]	46,500	NA	128,000 [2]
Bullion	593	95 [r]	7	NA	60 [2]
Wrought and unwrought lead	123,000	20,300 [r]	5,960	NA	53,400 [2]
TEL/TML preparations, based on lead compounds	517	307 [r]	13	NA	554 [2]
Exports (gross weight): Scrap	92,800	71,000 [r]	3,130	NA	33,200 [2]
Platts Metals Week North American producer price (cents per pound)	43.76	43.60 [r]	54.09	57.30	52.58

[e]Estimated. [p]Preliminary. [r]Revised. NA Not available. -- Zero.

[1]Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

[2]Includes data for January - July only; August data were not available at time of publication.

TABLE 2
MONTHLY AVERAGE LEAD PRICES

	North American producer price	LME		Sterling exchange rate
	cents/lb	$/metric ton	£/metric ton	dollars/£
2003:				
August	43.70	496.16	311.29	1.593862
December	44.30	691.69	394.89	1.751605
Year	43.76	514.62	313.88	1.634750
2004:				
June	53.88	869.66	475.77	1.827909
July	54.09	938.85	509.19	1.843800
August	57.30	920.77	505.85	1.820255

Source: Platts Metals Week.

TABLE 3
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP[1]

(Metric tons, gross weight)

Item	Stocks July 31, 2004	Net receipts	Consumption	Stocks August 31, 2004
Battery-lead	12,000	97,800	96,800	13,000
Soft lead	W	W	W	W
Drosses and residues	1,840	1,500	1,460	1,880
Other[2]	1,280	1,790	1,770	1,300
Total	15,100	101,000	100,000	16,200
Percent change from preceding month	XX	-0.2	-1.7	+7.3

W Withheld to avoid disclosing company proprietary data; included with "Other." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap not elsewhere classified.

TABLE 4
LEAD, TIN, AND ANTIMONY RECOVERED FROM
LEAD-BASE SCRAP IN AUGUST 2004[1]

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	69,700	--	--
Remelt lead	W	W	W
Antimonial lead	24,000	W	W
Other[2]	W	W	--
Total lead-base	94,100	40	346

W Withheld to avoid disclosing company proprietary data; included in "Total."
-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to total shown.

[2]Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 5
CONSUMPTION OF LEAD IN THE UNITED STATES[1]

(Metric tons, lead content)

Use	2003		2004		
	Year[p]	January - August [r]	July	August	January - August
Metal products:					
Ammunition, shot and bullets	48,800	35,100	4,030	4,330	36,100
Brass and bronze, billet and ingots	2,810	2,210	280 [r]	194	2,380
Cable covering, power and communication and calking lead, building construction	4,790	3,710	617	447	3,350
Casting metals	31,700	22,200	2,780	2,780	22,200
Sheet lead, pipes, traps and other extruded products	25,900	16,100	1,990 [r]	2,060	15,700
Solder	6,310	1,060	117	134	1,080
Storage batteries, including oxides	1,170,000	748,000	97,500 [r]	97,200	781,000
Terne metal, type metal, and other metal products[2]	23,200	10,200	1,260	1,510	10,400
Total metal products	1,310,000	839,000	109,000 [r]	109,000	872,000
Other oxides and miscellaneous	78,300	56,500	5,630	5,710	44,400
Total reported	1,390,000	895,000	114,000 [r]	114,000	916,000
Undistributed[e]	--	27,700	3,530 [r]	3,540	28,300
Grand total	1,390,000	923,000	118,000 [r]	118,000	945,000

[e]Estimated. [p]Preliminary. [r]Revised. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes lead consumed in foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.

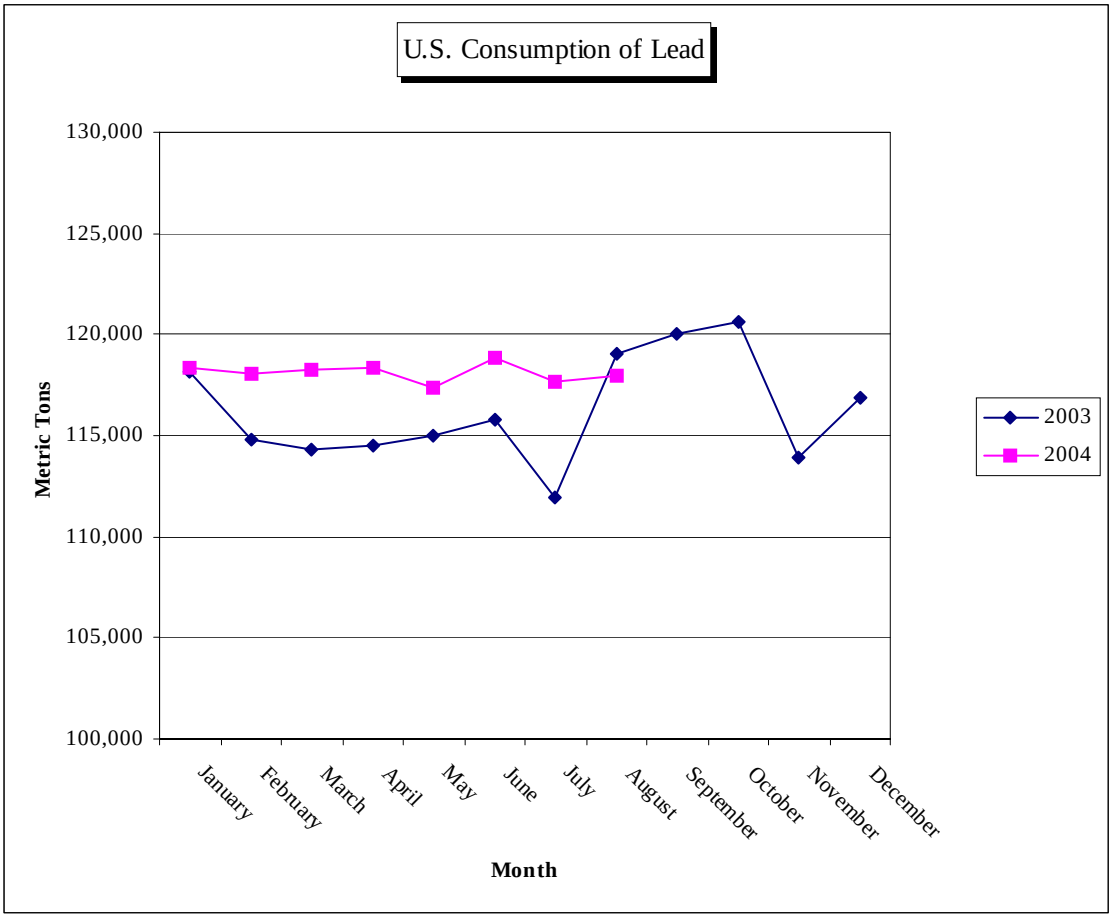

TABLE 6
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS,
AND CONSUMPTION OF LEAD[1]

(Metric tons, lead content)

Type of material	Stocks July 31, 2004	Net receipts	Consumption	Stocks August 31, 2004
Soft lead	34,700	62,600	63,600	33,800
Antimonial lead	17,100	31,200	31,600	16,800
Lead alloys	W	19,000	19,000	W
Copper-base scrap	W	63	51	W
Total	67,500	113,000	114,000	66,200

W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7
U.S. EXPORTS OF LEAD, BY CLASS[1]

(Metric tons)

	2003		2004		
	Year	July	June	July	January - July
Lead content:					
Ore and concentrates	253,000	23,800	4,220	46,500	128,000
Bullion	593	--	9	7	60
Materials excluding scrap	123,000	6,140	5,690	5,960	53,400
TEL/TML preparations, based on lead compounds	517	33	365	13	554
Total	377,000	29,900	10,300	52,500	182,000
Gross weight: Scrap	92,800	6,420	3,360	3,130	33,200

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS OF LEAD BY TYPE OF MATERIAL AND BY COUNTRY OF ORIGIN[1]

(Metric tons, lead content)

	General imports					Imports for consumption				
	2003		2004			2003		2004		
Type/Country	Year	January - July	June	July	January - July	Year	January - July	June	July	January - July
Base bullion:										
Argentina	5	--	--	--	--	5	--	--	--	--
Germany	1	--	--	--	--	1	--	--	--	--
Mexico	--	1	--	--	1	--	1	--	--	1
Total	6	1	--	--	1	6	1	--	--	1
Pigs and bars:										
Australia	10,100	10,100	--	--	--	107	--	1,880	2,950	10,200
Canada	167,000	114,000	14,000	12,800	89,400	167,000	114,000	14,000	12,800	89,400
China	1	1	--	--	2	1	1	--	--	2
Germany	--	--	42	41	252	--	--	42	41	252
Mexico	8,270	6,240	663	726	7,500	8,270	6,240	663	726	7,500
Other	259	82	599	737	3,200	259	82	599	737	3,320
Total	186,000	130,000	15,300	14,300	100,000	175,000	120,000	17,200	17,300	111,000
Grand total	186,000	130,000	15,300	14,300	100,000	175,000	120,000	17,200	17,300	111,000

-- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.